AUTOMATIC TRANSMISSION DOWNSHIFTS BASED ON TIRE ADHESION LIMITS

ABSTRACT OF THE DISCLOSURE

A shift control system that controls gear shifts in a vehicle includes a transmission and a controller. The controller detects driving conditions of the vehicle, estimates a traction load of the vehicle and determines a current traction load of the vehicle. The controller shifts the transmission based on the current traction load and the estimated traction load if the driving conditions are met. The current traction load is based on a lateral acceleration signal and a longitudinal acceleration signal. The estimated traction load is based on a curb weight of the vehicle, a weight transfer gain and an acceleration signal.